

**NEW JERSEY ALIGNMENT FOR NIH SUPPLEMENT USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY**

<b>USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY</b>		
<b>New Jersey Core Curriculum Content Standards: Science – Grades 9 – 12</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Indicator</b>
<b>2, 3</b>	<b>5.1.A.1</b>	When making decisions, evaluate conclusions, weigh evidence, and recognize that arguments may not have equal merit.
<b>3</b>	<b>5.1.A.2</b>	Assess the risks and benefits associated with alternative solutions.
<b>2, 3</b>	<b>5.1.A.3</b>	Engage in collaboration, peer review, and accurate reporting of findings.
<b>3</b>	<b>5.1.A.4</b>	Explore cases that demonstrate the interdisciplinary nature of the scientific enterprise.
<b>1, 2, 3</b>	<b>5.1.B.1</b>	Select and use appropriate instrumentation to design and conduct investigations.
<b>2, 3</b>	<b>5.1.B.2</b>	Show that experimental results can lead to new questions and further investigations.
<b>1, 2, 3</b>	<b>5.1.C.1</b>	Understand, evaluate and practice safe procedures for conducting science investigations.
<b>All lessons</b>	<b>5.4.A.1</b>	Know that scientific inquiry is driven by the desire to understand the natural world and seeks to answer questions that may or may not directly influence humans, while technology is driven by the need to meet human needs and solve human problems.
<b>3, 4</b>	<b>5.4.B.1</b>	Assess the impacts of introducing a new technology in terms of alternative solutions, costs, tradeoffs, risks, benefits and environmental impact.
<b>3</b>	<b>5.5.A.4</b>	Relate disease in humans and other organisms to infections or intrinsic failures of system.
<b>3, 4</b>	<b>5.5.C.3</b>	Assess the impact of current and emerging technologies on our understanding of inherited human characteristics.
<b>New Jersey Core Curriculum Content Standards: Mathematics – Grades 9 - 12</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Expectation</b>
<b>1, 2</b>	<b>4.1.A.1</b>	Extend understanding of the number system to all real numbers.
<b>1, 2</b>	<b>4.1.B.1</b>	Extend understanding and use of operations to real numbers and algebraic procedures.
<b>1, 2</b>	<b>4.2.D.2</b>	Choose appropriate tools and techniques to achieve the specified degree of precision and error needed in a situation.
<b>1</b>	<b>4.3.B.1</b>	Understand relations and functions and select, convert flexibly among, and use various representations for them, including equations or inequalities, tables, and graphs.

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<b>1, 2</b>	<b>4.4.A.2</b>	Evaluate the use of data in real-world contexts.
<b>1, 2</b>	<b>4.5.A.2</b>	Solve problems that arise in mathematics and in other contexts (cf. workplace readiness standard 8.3): open-ended problems, non-routine problems, problems with multiple solutions, or problems that can be solved in several ways.
<b>1, 2</b>	<b>4.5.B.1</b>	Use communication to organize and clarify their mathematical thinking: reading and writing, discussion, listening, and questioning.
<b>1, 2</b>	<b>4.5.B.2</b>	Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.
<b>1, 2</b>	<b>4.5.C.3</b>	Recognize that mathematics is used in a variety of contexts outside of mathematics.
<b>1, 2</b>	<b>4.5.C.4</b>	Apply mathematics in practical situations and in other disciplines.
<b>1, 2</b>	<b>4.5.D.6</b>	Evaluate examples of mathematical reasoning and determine whether they are valid.
<b>1, 2</b>	<b>4.5.E.1</b>	Create and use representations to organize, record, and communicate mathematical ideas.
<b>1, 2</b>	<b>4.5.E.2</b>	Select, apply, and translate among mathematical representations to solve problems.
<b>1, 2</b>	<b>4.5.E.3</b>	Use representations to model and interpret physical, social, and mathematical phenomena.
<b>2</b>	<b>4.5.F.1</b>	Use technology to gather, analyze, and communicate mathematical information.
<b>2</b>	<b>4.5.F.2</b>	Use computer spreadsheets, software, and graphing utilities to organize and display quantitative information (cf. workplace readiness standard 8.4-D).

**New Jersey Core Curriculum Content Standards: Language Arts Literacy – Grades 9 – 12**

<b>Lesson</b>	<b>Standard</b>	<b>Indicator</b>
<b>2, 3, 4</b>	<b>3.1.F.3</b>	Apply reading vocabulary in different content areas.
<b>2, 3, 4</b>	<b>3.1.G.1</b>	Identify, describe, evaluate, and synthesize the central ideas in informational texts.
<b>1, 2, 3</b>	<b>3.1.G.10</b>	Differentiate between fact and opinion by using complete and accurate information, coherent arguments, and points of view.
<b>3, 4</b>	<b>3.1.H.5</b>	Apply information gained from several sources or books on a single topic or by a single author to foster an argument, draw conclusions, or advance a position.
<b>3, 4</b>	<b>3.2.B.4</b>	Write multi-paragraph, complex pieces across the curriculum using a variety of strategies to develop a central idea (e.g., cause-effect, problem/solution, hypothesis/results, rhetorical questions, parallelism).

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<b>3, 4</b>	<b>3.2.B.5</b>	Write a range of essays and expository pieces across the curriculum, such as persuasive, analytic, critique, or position paper.
<b>3, 4</b>	<b>3.2.C.1</b>	Use Standard English conventions in all writing, such as sentence structure, grammar and usage, punctuation, capitalization, and spelling.
<b>3, 4</b>	<b>3.2.C.8</b>	Write legibly in manuscript or cursive to meet district standards.
<b>3, 4</b>	<b>3.2.D.1</b>	Employ the most effective writing formats and strategies for the purpose and audience.
<b>3</b>	<b>3.2.D.2</b>	Demonstrate command of a variety of writing genres, such as: persuasive essay, personal narrative, research report, literary research paper, descriptive essay, critique, or response to literature.
<b>All lessons</b>	<b>3.3.A.2</b>	Support, modify, or refute a position in small or large-group discussions.
<b>All lessons</b>	<b>3.4.A.1</b>	Explore and reflect on ideas while hearing and focusing attentively.
<b>2, 3</b>	<b>3.4.A.3</b>	Demonstrate appropriate listener response to ideas in a persuasive speech, oral interpretation of a literary selection, or scientific or educational presentation.
<b>All lessons</b>	<b>3.4.B.1</b>	Listen to summarize, make judgments, and evaluate.
<b>2, 3</b>	<b>3.5.C.3</b>	Recognize that creators of media and performances use a number of forms, techniques, and technologies to convey their messages.
<b>New Jersey Core Curriculum Content Standards: Comprehensive Health and Physical Education – Grades 9 - 12</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Indicator</b>
<b>3, 4</b>	<b>2.1.A.4</b>	Debate the social and ethical implications of the use of technology and medical advances to support wellness.
<b>3</b>	<b>2.1.D.1</b>	Analyze the availability and effectiveness of current and emerging diagnostic and treatment modalities for various diseases and health conditions.